

WHAT IS CLAIMED IS:

Sub a<sup>2</sup> 1. An ATM communication system comprising:

a source which produces traffic for connections having known traffic characteristics and unknown traffic characteristics, said traffic having unknown characteristics including traffic with weighted priorities and traffic without weighted priorities;

a network on which traffic travels, said source connected to said network, said source sends said traffic having known traffic characteristics and unknown traffic characteristics onto the network; and

a destination which is connected to the network and receives the traffic having known traffic characteristics and unknown traffic characteristics.

2. A system as described in Claim 1 including a switch connected to the network which switches the traffic from the source to the destination.

Sub a<sup>3</sup> 3. A source for producing ATM traffic for a network with switches comprising:

a mechanism which produces traffic for connections having unknown traffic characteristics, said traffic including traffic

with weighted priorities and traffic without weighted priorities;  
and

a mechanism for transmitting the traffic to the network.

4. A source as described in Claim 3 wherein the connections with traffic having unknown characteristics with weighted priorities are UBR connection traffic with weighted priorities (UBRw VC) and the traffic having unknown characteristics without weighted priorities is UBR VC traffic.

5. A source as described in Claim 4 wherein the UBRw VC traffic has multiple weighted priorities.

6. A source as described in Claim 5 including a mechanism for providing traffic having known traffic characteristics to the network.

7. A source as described in Claim 6 wherein the traffic having known traffic characteristics is either ABR, CBR, VBR or a combination of the same.

8. A source as described in Claim 7 including a mechanism which produces a signaling message that identifies to switches of the network the weight of each UBRw VC.

9. A source as described in Claim 8 wherein the weight of the UBRw VC specifies a relative priority among UBR VC and UBRw VC traffic.

10. A source as described in Claim 9 wherein the UBRw VCS having a higher weight receive a larger share of available bandwidth of the network.

11. A source as described in Claim 10 wherein each UBRw VC has N bits associated with it which corresponds to the weight of its priority.

Sub 2<sup>4</sup> 12. A switch for switching traffic on an ATM network from a source to a destination comprising:

a mechanism for receiving traffic for connections having unknown traffic characteristics, said traffic including traffic with weighted priorities and traffic without weighted priorities;

a mechanism for transmitting the traffic for connections to the network, said transmitting mechanism connected to the receiving mechanism; and

a scheduler for scheduling when the connections having traffic with unknown characteristics having weighted priorities are to be transmitted to the network, said scheduler connected to the transmitting mechanism and the receiving mechanism.

13. A switch as described in Claim 12 wherein the connections with traffic having unknown characteristics with weighted priorities are UBR connection traffic with weighted priorities (UBRw VC) and the traffic having unknown characteristics without weighted priorities is UBR VC traffic.

14. A switch as described in Claim 13 including a memory for storing the connections, said memory connected to the receiving mechanism, the scheduler and the transmitting mechanism.

15. A switch as described in Claim 14 wherein the memory includes buffers which are allocated according to the VC weight to give higher priority to the VCS with higher weight.

16. A switch as described in Claim 15 wherein the receiving mechanism also receives traffic having known characteristics of either ABR, CBR, VBR or a combination of the same.

17. A switch as described in Claim 16 wherein the scheduler utilizes weighted round robin scheduling to schedule when the UBRw VCS are to be transmitted by the transmitting mechanism.

Sub. 25 18. ~~A method for transferring traffic in an ATM communication system comprising the steps of:~~

transmitting from a source traffic of a connection having unknown traffic characteristics with a weighted priority onto an ATM network; and

transmitting from the source traffic of another connection having unknown traffic characteristics without a weighted priority onto the ATM network.

19. A method as described in Claim 18 including before the step of transmitting the traffic of the connection having unknown traffic characteristics with a weighted priority, there is the step of assigning a priority to the connection having unknown traffic characteristics with a weighted priority.

20. A method has described in Claim 19 including after the assigning step, there is the step of sending a signaling message from the source to a switch on the network which is to receive the traffic of the connection having unknown traffic characteristics with a weighted priority so the switch sets up a scheduling process corresponding with the weight of the priority of the connection having unknown traffic characteristics with a weighted priority.

21. A method as described in Claim 20 wherein the transmitting the traffic of the connection having unknown traffic characteristics with a weighted priority includes the step of transmitting traffic of a UBR connection with a weighted priority

(UBRw VC) and the step of transmitting traffic of another connection having unknown traffic characteristics without a weighted priority includes the step of transmitting traffic of a UBR connection without a weighted priority (UBR VC).

22. A method as described in Claim 21 including after the assigning step, there is the step of transmitting from the source traffic having known traffic characteristics of either ABR, CBR, VBR or a combination of the same.

23. A method as described in Claim 22 including after the transmitting the UBRw VC step, there is the step of receiving the UBRw VC at the switch.

24. A method as described in Claim 22 including after the receiving step, there is the step of scheduling the UBRw VC for transmission by the switch onto the network toward a destination based on weighted round robin.